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ABSTRACT

This paper discusses a study that examines the relationship between participation in religious youth groups, smoking behavior and subsequent use of cocaine, marijuana, and alcohol. The document briefly surveys earlier research on smoking and drug abuse. The study surveyed students, schools, parents, teachers, and student academic achievement data. Surveys began with eighth grade students and followed up the same students 2 years later. The document presents three models of drug use. The first relates smoking behavior and participation in a religious youth group to predict subsequent marijuana use. The hypothesis is that variables occur before smoking behavior and that smoking is a gateway drug leading to marijuana use. The second model predicts cocaine use from the same variables. The same hypothesis applies. The third model predicts binge drinking with the same hypothesis and variables. Path analysis was particularly relevant to this study because the technique has the ability to decompose effects into direct, indirect, and total effects. This enables the researcher to identify links between the variables and to establish weak causal ordering. The results of the study show that religious participation was related to lower substance abuse. The findings also confirm the notion that smoking usually precedes substance abuse. The results of this study reiterate the importance of drug prevention programs and the fact that drug prevention activities should occur in more places than the public school. Programs designed to discourage drug use must also contain a component that deals with tobacco use as well. (DK)

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Using Youth Group Participation Variables and Smoking to Predict Drug Use in a National Sample

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Using Youth Group Participation Variables and Smoking to Predict Drug Use in a National Sample

Introduction

The objective of the study was to look at the relationship between participation in religious youth groups, smoking behavior and subsequent use of cocaine, marijuana and alcohol. The data source was the National Educational Longitudinal Study 1988 (NELS.88) and the 1990 follow up of the same students (Ingels et al., 1990). The NELS:88 and 90 data source contain student, school, teacher, and parent surveys and test scores of a nationally representative sample of 24,599 students in 1,035 schools.

Framework

One of the major concerns of public school parents in the United States is drug abuse (Elam, 1990). This concern is not without merit because the United States has the highest rates of adolescent drug abuse of any industrialized nation (American Association of School Administrators, 1985). The reasons for the drug-abuse problem are multi-faceted -- peer pressure, easy availability, poor role models, and school failure to name a few. Smoking and drug abuse have been the focus of numerous studies during recent years. Several of those studies will be reviewed in the following pages.

Research conducted by Mills and Noyes (1984) indicated that smoking and drinking often coincide with one another. Their research also indicated that drug use is sequential and additive; once a person becomes dependent on a new drug they do not abandon the previously used drugs.

Similarly, Welt and Barnes (1987) and Yamuguci and Kent (1984) found that alcohol use usually precedes the use of other drugs such as marijuana, cocaine, and heroin. The researchers also found that cigarette smoking often precedes the use of harder drugs.

A later study by Kandel, Yamaguchi and Chen (1992) used longitudinal data from 1971 to 1991 on a group of 1,160 people to give further credence to the gateway theory of drug use. For the male population the pattern of drug progression was: alcohol precedes marijuana; alcohol and marijuana precede other illicit drugs; and alcohol and either cigarettes or marijuana precede prescribed psychotropic drugs.

Research on attitudes and peer behavior and how they impact smoking, alcohol, and drug use was conducted by Grubs and Morgan (1990). The sample was composed of 2,782 students in Dublin, Ireland ages 12 - 18. The researchers collected data on three different occasions over the course of one year. Results indicated that smoking, drinking and drug use were most prevalent when both the student's attitude and the student's perceived social support to that activity were favorable. The predictions were for established patterns and should not be interpreted as factors which cause drug use. Perceived behavior of peers was more predictive of behavior than perceived disapproval by parents and perceived behavior of parents. The researchers theorized that students may seek out friends with similar attitudes after they start smoking, drinking or using other drugs.

Research by Thorlindsson and Vilhjalmsson (1991) validated previous research on individual and social factors related to both

smoking and alcohol use. The study, which was conducted in Iceland, used a nationwide random sample of 1,200 9th graders to complete a questionnaire. Results were similar to previous findings; students who were emotionally supported by their parents were less likely to use alcohol or tobacco. There was also a strong relationship between alcohol use and cigarette smoking (r=.48). It was also found that adolescent drug users almost always reported using alcohol and cigarettes; 95% of those who had used drugs had used alcohol and 92% had used cigarettes. This study gives cross-cultural validation to studies with similar findings in the United States.

Research by Johnson and Pandina (1991) also found that parental warmth was positively related to a child's choice to not use alcohol. Further, in this longitudinal study of 1,380 middle class subjects (ages 9, 12, 15) in New Jersey, the authors found that parental lack of warmth, alcohol use, and tolerance for alcohol use were predictors of drug use in their children. Finally, in most instances, the same gender parent showed the highest positive correlation for a younger child's alcohol use.

Researchers such as Jessor and Jessor (1975); Moss, Moss and Kulik (1976) and (1977) have reported that less religiously oriented students are more likely to start drinking earlier and to drink more than their more religious counterparts. Research by Weschler and McFadden (1979) indicated that Jewish-American college students have the highest rates of drinking but the lowest rates of alcohol abuse. The researchers theorize that the Jewish religion

and culture have served to internalize norms that social drinking is permissible but abuse is not.

Cahalen (1970) indicated that those who are more religious drink less with Catholics having the highest drinking rate when one controls for church attendance. Other researchers such as Jessor (1976) and Wechsler and McFadden (1979) have shown that church going behavior is inversely related to substance abuse. Furthermore, Gersick et al. (1982) have shown that the more religious the person is the less likely she/he will use alcohol or other drugs.

Research concerning the relationship between religion, alcohol, and sex was conducted at the University of Maryland with a representative sample of 376 students (Patterson and Sedleck, 1983). Each student completed a questionnaire concerning their attitudes towards alcohol, sex, and religion. Responses to the items were factor analyzed and produced eight factors. Factor three was named a religiosity factor. Those who scored high on the factor felt religion was important in their like and tended to not use alcohol.

Bechtel and Swisher (1992) used a random sample of 26 school districts in Pennsylvania to investigate alcohol use and its relationship with independent variable such as school misconduct, time spent on sports, religious activities and extracurricular activities. The 7,799 sixth through twelfth graders completed the Primary Prevention Awareness, Attitude, and Usage Scales, Form 7. The researchers found that time spent on religious activities resulted in significant lower use of beer, liquor or wine.

Pendorf (1992) also found that 10th through 12th grade students who were heavy drinkers spent less time doing homework, reading, or in religious activities. The sample was composed of 222 rural Pennsylvania youth. Pendork believes that adults should not indicate that alcohol use is entirely bad because adolescents perceive it as a way to gain friendship and social involvement.

More recent research by Dewalt (1992) using the NELS:88 data of 24,599 students found that participation in a religious youth group was one factor that could be used to predict smoking behavior. Eighth grade students who indicated they were members of a religious youth group were less likely to smoke cigarettes.

Methodology

Three Models of Drug Use

Figure 1 displays the first model predicting subsequent marijuana use form SES, participation in a religious youth group (REL), and smoking behavior (SMOKE). The variables of SES SMOKE and REL were collected in 1988 while self-reported marijuana use was collected 1990. It was hypothesized that SES and REL are variables which occur before smoking behavior and that smoking is a gateway drug leading to marijuana use.

Figure 1

Model Predicting Marijuana Use

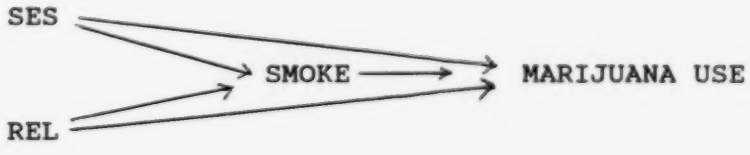


Figure 2 displays the model predicting subsequent cocaine use from SES, participation in a religious youth group (REL), and smoking behavior (SMOKE). The variables of SES, SMOKE and REL were collected in 1988 while self-reported cocaine use was collected 1990. It was hypothesized that SES and REL are variables which occur before smoking behavior and that smoking is a gateway drug correlated with cocaine use.

Figure 2

Model Predicting Cocaine Use

Figure 3 displays the model predicting subsequent binge drinking behavior from SES, participation in a religious youth group (REL), and smoking behavior (SMOKE). The variables of SES, SMOKE and REL were collected in 1988 while self-reported binge drinking (Number of times respondent had five or more drinks in a row in the last two weeks) was collected 1990. It was hypothesized that SES and REL are variables which occur before smoking behavior and that smoking is a gateway drug correlated with binge drinking.

Figure 3

Model Predicting Binge Drinking

The Sample

The NELS.88 data was a profile of the nation's eighth grade population and was composed of a student survey, school survey, parent survey, teacher survey, and student academic achievement data. The NELS.90 data was a follow-up of the same students two years later.

A two-stage stratified sample probability design was used by NCES to select a nationally representative sample of schools and students. The first stage resulted in 1,734 schools being selected; 1,052 of these schools agreed to participate. The sample included 815 public schools and 327 private schools. The second stage was a random selection of 26,435 students of whom 24,599 agreed to participate. Each school was represented by about 24 students (Ingels, et al., 1990).

The researcher used the data sets supplied by NCES to undertake the analysis of selected variables. The 1988 student sample was composed of 3.6% Asian students, 4.2% American Indian students, 10.4% Hispanic students, 13.2% Black students, and 68.6% White students. Because the data sets contain many variables, the variables of interest were drawn from the 1988 and 1990 student data sets and used to create a data set with the variables of interest.

Data Analysis

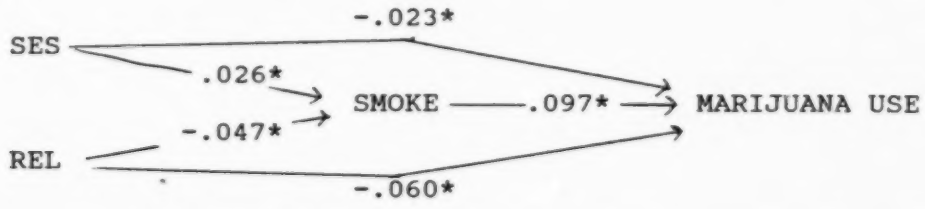
A correlation matrix was calculated between variables of interest using SPSS-X. The correlation coefficients were then

entered into the Lisrel 7 program (Joreskog and Sorbom, 1989) for path analysis to test each of the three models. Path analysis was particularly relevant to this study because the technique has the ability to decompose effects into direct, indirect, and total effects. This enables the researcher to identify links between the variables. The technique also allows the researcher to establish "weak" causal ordering (Marascuil & Levin, 1983).

Results

As displayed in Figure 4, each of the three antecedent variables had significant ($t>2.58$ or $p<.01$) direct effects on marijuana use. While previous smoking behavior had the greatest effect ($b = .097$), participation in a religious youth group also was predictive of less marijuana use ($b = -.060$). That is those who participated in a religious youth group as eighth graders were less likely to use marijuana two years later. The hypothesized model was confirmed. Table 1 outlines the direct, indirect and total effects of the model.

Figure 4
Standardized Effects on Marijuana Use



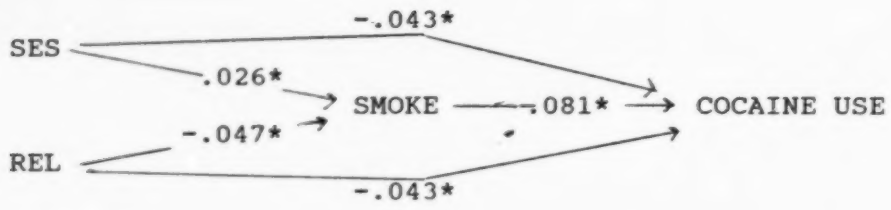
* = $p<.01$ or $t>2.58$

As displayed in Figure 5, each of the three antecedent variables had significant ($t>2.58$ or $p<.01$) direct effects on

cocaine use. While previous smoking behavior had the greatest effect (b = .081), participation in a religious youth group was predictive of less marijuana use (b = -.043). That is those who participated in a religious youth group as eighth graders were less likely to use cocaine two years later. The hypothesized model was confirmed. Table 1 outlines the direct, indirect and total effects of the model.

Figure 5

Standardized Effects on Cocaine Use

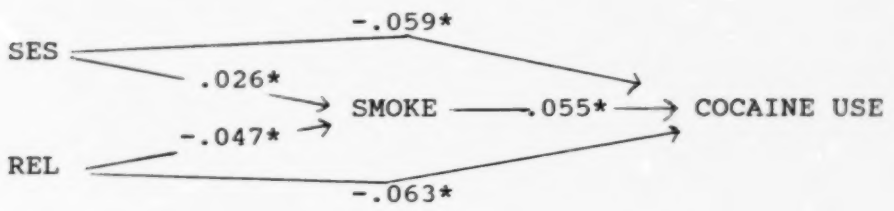


* = p < .01 or t > 2.58

As displayed in Figure 6, each of the three antecedent variables had significant (t>2.58 or p<.01) direct effects on binge drinking. Participation in a religious youth group had the greatest effect (b = -.063), meaning participation in a religious youth group was predictive of less binge drinking. The rate of previous smoking was also related to binge drinking (b=.055). The hypothesized model was confirmed. Table 1 outlines the direct, indirect and total effects of the model.

Figure 6

Standardized Effects on Binge Drinking



* = p<.01 or t>2.58

Discussion

The results of this study are similar to those of researchers such as Jessor and Jessor (1975), Wechsler and McFadden (1979), and Gersick et al., (1981). In each of these cases religious participation was related to lower substance abuse. The findings also confirm the notion that smoking usually precedes substance abuse which was shown previously by Welt and Bonner (1987) and Yamuguchi and Kent (1984).

The results of this study reiterate the importance of drug prevention programs and the fact that drug prevention activities should occur in more places than the public schools. Religious youth groups are one important factor to reduce possible future drug abuse. But religious leaders need to be mindful that this is a small but significant inverse relationship. Thus religious leaders who are interested in the growth of their young people will encourage more programs and forums discouraging drug use.

It should also be noted that the three models show that smoking is related to future drug use. Thus programs designed to discourage drug use must also contain a component that deals with tobacco use as well.

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Table 1
Direct (D), Indirect (I) and Total (T) Effects on Drug Use

	Marijuana Use			Cocaine Use			Binge Drinking		
	D	I	T	D	I	T	D	I	T
Variable									
SES	-.023	.002	-.021	-.043	.002	-.041	-.059	.001	-.058
REL	-.060	-.005	-.065	-.043	-.003	-.046	-.063	-.003	-.066
SMOKE	.097	--	.097	.081	--	.081	.055	--	.055

* t>2.58 and p<.01 for all direct and total effects